Testbed Roudup

The NOAA Hazardous Weather Testbed:
Summary of 2013 Spring Experiments and Preview of 2014 Activities

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Abstract

Spring Experiments in the NOAA Hazardous Weather Testbed (HWT) are traditionally organized into two groups: The Experimental Forecasting Program (EFP) and the Experimental Warning Program (EWP). Each has historically had its own focus and purpose but, in 2013, adjustments were made to connect their respective activities such that the EFP forecast information better supported EWP warning "operations." To accomplish this, a key forecasting focus explored the utility of short-term convection-allowing and mesoscale ensemble model guidance in creating frequently updated, high-temporal resolution probabilistic forecasts of severe weather. This downscale information flow is consistent with the emerging "Forecasting a Continuum of Environmental Threats" (FACETs) vision in support of NWS Warn on Forecast and Weather Ready Nation goals. The EFP forecasting activities were supported by a suite of new and improved experimental mesoscale and convection-allowing model (CAM) guidance, including: the SPC Storm Scale Ensemble of Opportunity; the OU/CAPS Storm Scale Ensemble Forecast system; the NSSL Mesoscale Ensemble (NME), an EnKF-based 18-km grid-spacing, 36 member analysis and forecast system; a parallel NSSL WRF-ARW initialized from the NME; 12 UTC-initialized convection-allowing ensembles; and two CAM runs (i.e., 4.4- and 2.2-km grid spacing) from the Unified Model of the Met Office through a new collaborative endeavor. Concurrent with this activity, the EWP forecasters examined Multi-Sensor Multi-Radar (MRMS) fields to test and evaluate blended data approaches to the warning process, an enhanced hail discrimination within the Dual-Polarization radar Hydrometeor Classification Algorithm; and employed GOES-R prototype satellite applications for lightning detection and analysis of storm-scale processes. Outside of the Spring Experiment, the Phased Array Radar Innovative Sensing Experiment (PARISE) focused on microburst detection. This presentation will highlight the activities and results of each of these experiments and will provide a preview of 2014 plans and activities.